

Title (en)  
Controller for underwater pump.

Title (de)  
Regler für Unterwasserpumpe.

Title (fr)  
Régulateur pour pompe submersible.

Publication  
**EP 0386703 A2 19900912 (EN)**

Application  
**EP 90104274 A 19900306**

Priority  
JP 2599989 U 19890307

Abstract (en)

A controller for an underwater pump which operates to start and stop the pump in response to a water level detected by a water level sensor is disclosed. The controller (10) is constituted as a separate component which comprises a watertight case (11), a first connector (13) provided at a first predetermined position of the case for installation on a power connector (12) provided at a pump casing (51), a second connector (14) provided at a second predetermined position on the case, on which an external power connector (15) is to be installed, electronic parts and units (18, 19, 20) constituting a control circuit installed in the case for starting and stopping the pump based on signals output from the water level detection sensor (S1, S2, S3), and a cable (22) watertightly derived from the case externally for electrically connecting the control circuit and the water level sensor. The pump may be operated in an automatic operation mode. However, by removing the controller from the pump casing and the external power connector and by directly connecting the external power connector to the power connector of the pump, the pump may be converted to a non-automatic operation mode.

IPC 1-7  
**F04B 49/04; G01F 23/00; G05D 9/12; H01H 35/18**

IPC 8 full level  
**F04D 13/00** (2006.01); **F04B 49/02** (2006.01); **F04B 49/025** (2006.01); **F04D 13/08** (2006.01); **G05D 9/12** (2006.01)

CPC (source: EP KR US)  
**F04B 49/02** (2013.01 - KR); **F04B 49/022** (2013.01 - EP US); **F04B 49/025** (2013.01 - EP US); **G05D 9/12** (2013.01 - EP US)

Cited by  
DE9410407U1; EP0992767A1; CN106555763A; CN102402803A; EP0947703A1; EP0947702A1; FR2777047A1; GB2333843A; US6305235B1

Designated contracting state (EPC)  
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

DOCDB simple family (publication)  
**EP 0386703 A2 19900912; EP 0386703 A3 19910102; EP 0386703 B1 19940720**; AT E108870 T1 19940815; DE 69010718 D1 19940825;  
DE 69010718 T2 19950316; JP H02115990 U 19900917; JP H078877 Y2 19950306; KR 0152271 B1 19981102; KR 900014757 A 19901024;  
US 5100298 A 19920331

DOCDB simple family (application)  
**EP 90104274 A 19900306**; AT 90104274 T 19900306; DE 69010718 T 19900306; JP 2599989 U 19890307; KR 900002961 A 19900307;  
US 48910190 A 19900306